

Claims

1. Method for the manufacture of a construction element, especially a board, made from wood fibres, wood chips and/or sawdust comprising the following stages:
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- application of adhesive to the wood fibres, wood chips and/or sawdust,
- pressing the wood fibres, wood chips and/or sawdust provided with the adhesive to form a construction element, especially a board.
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2. Method according to claim 1, wherein the pressing is carried out at a temperature below 120°C, preferably below 95°C, by particular preference below 60°C.
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3. Method according to claim 1 or 2, wherein reactive resins are used either exclusively or predominantly as the adhesive.
4. Method according to any one of the preceding claims, wherein urea resins, melamine resins, acrylic resins, epoxy resins, polyester resins or mixtures of these are used as the adhesive.
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5. Method according to any one of the preceding claims, wherein the proportion of adhesive used is selected in such a manner that a proportion of 35% by weight, preferably 20% by weight, by particular preference 10% by weight adhesive is not exceeded in the manufactured product.
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6. Method according to any one of the preceding claims, wherein the wood fibres, wood chips and/or the sawdust are broken down into solid and liquid components within a gas-tight system, the
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liquid components being separated from the solid components and removed from the gas-tight system at temperatures below 90°C, especially below 70°C, by particular preference below 50°C.

- 5 7. Method according to any one of the preceding claims, wherein the adhesive is applied to the wood fibres, wood chips and/or sawdust at a temperature below 100°C.
- 10 8. Method according to any one of the preceding claims comprising the stages:
- drying of wood fibres, wood chips and/or sawdust in a drying device,
 - application of adhesive to the dried wood fibres, wood chips and/or sawdust outside the drying device at a cooled temperature,
 - 15 - pressing the wood fibres, wood chips and/or sawdust provided with the adhesive to form a construction element.
- 20 9. Method according to any one of the preceding claims, **characterised in that** adhesive is applied to the wood fibres, wood chips and/or sawdust by spraying an adhesive-gas mixture onto the fibres.
- 25 10. Method according to any one of the preceding claims, **characterised in that** the adhesive is applied in such a quantity that 45 to 55 kg adhesive per m³ construction element are used.
- 30 11. Method according to any one of the preceding claims, **characterised in that,** before the application of adhesive, the wood fibres, wood chips and/or sawdust are placed onto a belt weighing machine, and that

the belt weighing machine and the application of adhesive are controlled in such a manner that the quantitative ratio of the adhesive to the wood fibres, wood chips and/or sawdust is essentially constant during the application of the adhesive.

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12. Method according to any one of the preceding claims,
characterised in that

the wood fibres, wood chips and/or sawdust provided with the adhesive are mixed and/or stirred with one another, in particular,
10 in a mixer (39) with cooled walls.

13. Method according to any one of the preceding claims,
characterised in that

the fibres are formed into a curtain or a mat and the adhesive is
15 applied to the curtain or the mat or introduced into the curtain or the mat.

14. Method according to any one of the preceding claims,
characterised in that

the adhesive is applied to the wood fibres, wood chips and/or
20 sawdust together with heated air, in particular, at an air temperature of 40 to 70°C.

15. Method according to any one of the preceding claims,
25 **characterised in that**

the adhesive is applied to the wood fibres, wood chips and/or sawdust together with a hardening agent.

16. Method according to any one of the preceding claims,
30 **characterised in that,**

after application to the wood fibres, wood chips and/or the sawdust, the adhesive is initially activated only to a limited extent at its surface.

- 5 17. Method according to any one of the preceding claims,
characterised in that
the wood fibres, with chips and/or the sawdust provided with the adhesive are blown through an ascending pipe.
- 10 18. Method according to any one of the preceding claims,
characterised in that
the wood is broken down into solid components and liquid components, and that the liquid components are applied to the wood fibres, wood chips and/or sawdust as an adhesive.
- 15 19. Method according to the preceding claim,
characterised in that
the liquid components are cooled before application, in particular, by at least 30°C, preferably by at least 60°C.
- 20 20. Method according to any one of the preceding claims,
characterised in that
lignin and hemicellulose are contained in the adhesive, in particular, in a proportion up to 20% by weight.
- 25 21. Method according to any one of the preceding claims,
characterised in that
synthetic-material fibres and/or glass fibres are added to the wood fibres, wood chips and/or sawdust.
- 30 22. Method according to any one of the preceding claims,

characterised in that

moulded parts in the form of boards are manufactured.

23. Method according to any one of the preceding claims,
5 **characterised in that**
the wood fibres, wood chips and/or sawdust are charged with
steam immediately before pressing.
24. Method according to any one of the preceding claims,
10 **characterised in that**
MDF and/or HDF boards for flooring panels and moulded parts
are manufactured at the same time, and that the fibres used
originate from the same device, especially from the same
grinding device.
- 15 25. Method according to any one of the preceding claims,
characterised in that
the pressed construction element is coated at least with paper
provided with resin and compressed in a press at temperatures
20 above 150°C, preferably at temperatures above 180°C.
26. Construction element made entirely or predominantly from wood
fibres, wood chips and/or sawdust provided with adhesive and
compressed together.
- 25 27. Construction element according to the preceding claim,
characterised in that
the proportion of adhesive in the construction element is 45 to 55
kg per m³, in particular, 50 to 52 kg per m³.
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28. Construction element according to any one of the two preceding claims,
characterised in that
the adhesive in the board consists of non-hardened resins.
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29. Construction element according to any one of the preceding device claims,
characterised in that
reactive resins such as urea resins, melamine resins, acrylic
10 resins, epoxy resins, polyester resins or mixtures of these are used as the adhesive.
30. Construction element according to any one of the preceding device claims,
15 **characterised in that**
the construction element is a board.
31. Construction element according to any one of the preceding device claims,
20 **characterised in that**
this consists entirely or predominantly of wood fibres glued together.
32. Construction element according to any one of the preceding device claims,
25 **characterised in that**
this contains sawdust, wherein the proportion of sawdust in the construction element is preferably more than 5% by weight, by particular preference more than 10% by weight.
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33. Construction element according to any one of the preceding device claims,
characterised in that
the density of the construction element is at least 300 kg/m³,
5 preferably at least 400 kg/m³, by particular preference at least 500 kg/m³.
34. Construction element according to any one of the preceding device claims,
10 **characterised in that**
the density of the construction element is no more than 1500 kg/m³, preferably no more than 1000 kg/m³, by particular preference no more than 800 kg/m³.
- 15 35. Construction element according to any one of the preceding device claims, which can be manufactured using a method according to any one of the preceding method claims.
- 20 36. Laminate panel comprising a carrier board and further layers, in particular, paper layers above and/or below the carrier board,
characterised in that
the carrier board is manufactured from a construction element according to any one of the preceding device claims.
- 25 37. Laminate panel according to the preceding claim,
characterised in that
the density of the carrier board is more than 1500 kg/m³, preferably more than 2000 kg/m³.